TECHNOLOGY FOR
Alaskan Transportation
Local Technical Assistance Program

Spring 1995
Volume 20 Number 1
January - March 1995

IN THIS ISSUE . . .

This newsletter is funded by a grant from the Federal Highway Administration and the Alaska Department of Transportation and Public Facilities.

Suicide Runs

by MSgt. Ken Reed of Elmendorf AFB, for Air Force Personnel

We've all seen the signs of "Fishing Pox." You know, sweating, stuttering, and hands shaking as you change the line on your reels. Melting snow and higher temperatures seem to generate those feelings in all of us. After all, this is Alaska! Well I have a question: Is a fish worth your life? Are two fish, or even ten fish worth your life? If you engage in "suicide runs," those fish could cost you your life.

For those of you not familiar with this phrase, a suicide run means working all day, driving to your favorite fishing hole, fishing all night and heading straight back to work, all without sleeping. I understand this is Alaska, the Great Land, God's Country, and the long winters take their toll on our sanity, but consider the dangers involved.

Besides risking your own life, what about the lives of others traveling those same roads? Also, you have the lives of the other people in your vehicle to think about.

In a split second, the price of that prize fish can be someone's life. Is this worth it?

This is not meant to scare you out of participating in your "Alas-

(continued on page 3)

Crumb Rubber Mandate Nixed for FY 1995

Opponents of the federally mandated use of crumb rubber as a modifier in asphalt on federal-aid projects received an 11th-hour reprieve for the second year in a row. In late September, Congress approved a House/Senate conference committee report on fiscal year 1995 (FY95) U.S. Department of Transportation appropriations. The committee report included a one-year moratorium on a provision in the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) mandating the use of certain percentages of scrap tire crumb rubber in asphalt paving mixtures.

Congressional approval of the report containing the moratorium means that use of crumb rubber in asphalt will not be required by federal law in FY95 (October 1, 1994

(continued on page 3)

Bright Ideas

The public works crew of the Town of Tillsonburg gets top marks for creative problem solving and second place in Ontario Good Roads Association's 1994 Productivity Competition for equipment innovations. Their idea was a simple conversion of the dump truck tailgate to a right side hinged option.

Bulky items such as stumps and special pick-ups in the town tended to create unsafe conditions with the conventional tailgate on the truck box. When it was established that the tailgate would have to be put up every time the truck moved, the merits of the idea were confirmed.

Larry Stanley, Mechanic, applied his logic and installed a tough set of hinges and sliding bolt mechanisms.

A basic solution to a classic problem. Maybe it's not so unique, but they made it happen. Do you have that same attitude toward solving problems? Don't just talk about them. Solve them!

If you have an idea that will save time and effort, call the Alaska T2 Program office at (907) 451-5320. We want to hear what you're doing!

Adapted from "Municipal Routes," the newsletter of the Ontario Good Roads Association, March, 1995.♦

News & Views

Transportation Research Information Hotline

The TransNow staff at the University of Washington have created the Transportation Research Information Hotline (TRIH), an easy to use service for anyone seeking up-to-date information on transportation facts and issues. TRIH (pronounced "try") serves transportation researchers, agency personnel, private firms, and the public. TRIH's information resources include:

· Transportation professors at the University of Washington, TransNow's consortium of universities, and other University Transportation Centers

· Experts from government agencies and private firms

· Libraries at the University of Washington and elsewhere

· The Internet

· Area newspapers and newsletters

Staff will answer questions immediately if possible, call back if necessary, advise callers who they may contact to get the information they need, or photocopy materials for fax or mail delivery.

Below is information on how to contact TRIH.

TransNow
135 More Hall, FX-10
University of Washington
Seattle, WA 98195
(206) 616-1088
Fax: (206) 543-5965

Internet:
trihline@u.washington.edu

Sixth International Conference on Low-Volume Roads

The Sixth International Conference on Low-Volume Roads will be held June 25-29, 1995 at the Radisson Hotel Metrodome in Minneapolis, Minnesota. Conducted by the Transportation Research Board, this conference is being hosted by the Center for Transportation Studies at the University of Minnesota.

The conference will provide a unique opportunity for engineers, planners, administrators, and researchers to exchange information and explore the benefits of recent research related to low volume roads. The conference field trip features a visit to Mn/ROAD, a unique outdoor laboratory which studies the effects of traffic loads and cold weather climate on pavement performance. The registration fee is $160 (US) through May 25, 1995 and 190 (US) after this date. ♦

We Want To Hear From You

If you have news or a meeting to advertise, comments about our newsletter, or an idea to share we want to hear from you. Contact our newsletter editor, Mike Rundquist at (907) 451-5321.♦

Crumb Rubber Mandate Nixed
(continued from page 1)

through September 30, 1995). The moratorium does not repeal the crumb rubber requirement, which extends through 1997, but only delays its required implementation until FY96 (October 1, 1995). In FY96, states will be required to use a total of 15% recycled rubber by weight in asphalt mixes for federal-aid highway projects.

The states, acting through the American Association of State Highway & Transportation Officials (AASHTO), have adopted a resolution strongly opposing Section 1038(d) of ISTEA—which requires states to utilize crumb rubber in a significant portion of their asphalt pavements or face extremely high penalties. The AASHTO resolution asks that the present requirement be repealed or very substantially modified. A letter to the chairman of the Transportation Subcommittee from 49 state transportation heads stated:

"Decisions on the composition of pavement should be made by the states based on engineering and cost considerations, including consideration of local variations in aggregates, available asphalt cements, weather, climate and other factors. The present law ignores these considerations and mandates the use of crumb rubber modified pavement in a considerable number of projects, regardless of whether it is the best engineering pavement design or the most cost-effective alternative.

> *"Decisions on the composition of pavement should be made by the states . . ."*

Because crumb rubber modified asphalt is significantly more costly than conventional mixes, this provision is a classic "unfunded mandate." The higher cost of this material means that states will be able to complete fewer projects, or fewer miles of projects, with whatever funds they actually receive. It means less construction, and all that entails—fewer pothole-laden roads can be resurfaced, fewer unsafe curves can be straightened.

An additional consequence of mandating a particular asphalt mix is that it requires a state to continue to use that mix even if something better is available now—or later. For at least a portion of a state's highway program, it freezes technology and discourages the use of innovative pavements. We have also noted that there are unresolved environmental concerns which are still being studied by government agencies."

Research on the health and environmental impacts, as well as the cost and performance of paving mixtures containing crumb rubber is currently being conducted by the Federal Highway Administration. This research effort also includes the active participation of the National Institute of Occupational Safety & Health, the Environmental Protection Agency, labor groups, state departments of transportation, the National Asphalt Pavement Association, and other industry groups.

Adapted from "Roads and Bridges," October and November, 1994. ♦

New! Improved! HWYCON Software from SHRP

The revised edition of the Strategic Highway Research Program's (SHRP) HWYCON software is now available. HWYCON is a program designed to assist state highway department personnel with diagnosing distress on concrete highway pavements & concrete structures; selection of materials for construction & reconstruction; & obtaining recommendations of materials & procedures for repair & rehabilitation methods. The package contains seven 3.5-inch, high density, white computer disks & the users manual. The manual provides information about installation, the hardware requirements of the program, the knowledge base, & operation of HWYCON.

HWYCON was originally distributed on black 3.5-inch disks last fall. If you have HWYCON on black disks, please discard the software. A computer virus was discovered on the original version & the software was recalled.

If you would like to order HWYCON, contact the Transportation Research Board Business Office at (202) 334-3214. ♦

Suicide Runs
(continued from page 1)

kan Experience." Enjoy it safely and wisely. Take your time getting to and from that favorite fishing hole. Rest up before the trip out and prior to heading back home.

Don't drink and drive. Have a designated driver if drinking occurs.

Be a safe water sports participant. If you allow yourself plenty of time for the trip and use common sense, this can be a rewarding summer.

Now let's hope the fish are biting! ♦

Make Plans Now For August '96!

Eight International Specialty Conference on Cold Regions Engineering

The Eighth International Specialty Conference on Cold Regions Engineering, Cold Regions Infrastructure: An International Imperative for the 21st Century, is scheduled for August 12-17, 1996 in Fairbanks, Alaska, USA. This international specialty conference with associated symposium will provide a broad forum for the exchange & advancement of scientific & technical knowledge involving cold regions engineering as it relates to the various modes of the cold regions infrastructure: such as buildings, highways, airports, railroads, pipelines, utilities & communication systems. Formal papers, a poster session, & panel discussions will be offered on the design, construction & maintenance of these crucial modern facilities which affect, define, & surround the lives of those who inhabit these far northern climes.

The conference's primary sponsor, the American Society of Civil Engineers' Technical Council on Cold Regions Engineering, in cooperation with the University of Alaska - Fairbanks, Canadian Society of Civil Engineers, National Society of Professional Engineers & U.S. Army Cold Regions Research & Engineering Laboratory, have arranged for workshops on soil water problems, thermosyphon design, & arctic construction engineering, as well as a mini-symposium on the 800 mile long Trans-Alaska Pipeline. Various field trips & tours will be offered to examine important examples of cold regions infrastructure such as the Prudhoe Bay oilfields, Fairbanks Permafrost Tunnel, Poker Flat Rocket Range, & the City of Fairbanks' power, sewer & water utility systems.

For further information, please contact:

Dr. F. Lawrence Bennett, PE,
Conference Chair
School of Engineering, University of Alaska - Fairbanks
P.O. Box 75-5900
Fairbanks, AK 99775-5900
Ph. (907) 474-6121
FAX (907) 474-6087
FYASCE8@aurora.alaska.edu ♦

ALASKA TRANSPORTATION TECHNOLOGY TRANSFER

Local Technical Assistance Program
Department of Transportation and Public Facilities
2301 Peger Road M/S 2550
Fairbanks, AK 99709-5399

address correction requested

BULK RATE
U.S. Postage
PAID
Fairbanks, AK
Permit No. 87

FORMULATION OF ROAD SERVICE AREAS_____ 1995

No. 35

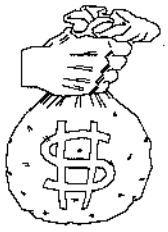
This is part one of a two part series by

Fred Korpinen, Road Director, Kenai Peninsula Borough

SERVICE AREAS IN GENERAL

What is a "Service Area?" Definition: an area of a borough, designated by ordinance, within which the borough provides a governmental service that is not provided on either an areawide or non-areawide basis. A Borough Assembly, by state law, is granted the authority to establish service areas.

Service areas are creations of a borough and are established to furnish a different service or a different level of service than that provided through a borough's mandatory areawide powers and duties. They are not independent of a borough but are appendages designed to provide extra services to only those areas which desire them. Service area funding is derived from a variety of sources, such as additional property taxes on all real property within the service area boundaries, through state grants, or through state aid to municipalities for roads as provided under Alaska Statue, Title 29, Municipal Government, Section 29.60.110.

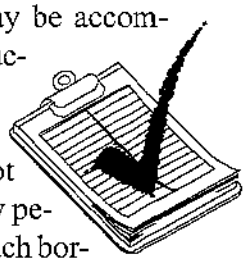


While a borough does not contribute actual funding to a service area, it does assist by obtaining state funds, collecting the tax levy, and disbursing the funds for payment of services. It is imperative that the service areas institute and maintain viable financial records to assist the borough financial department in allocating and disbursing all funds budgeted for the service area.

Since a borough does not have the authority to provide road maintenance or other locally desired services, service areas are formed and service area boards, or commissions, are established. There are specific steps that must be taken in order to form a service area, but before those steps are undertaken the following considerations must be evaluated:

1. Determine the services to be provided.
2. Define the area on a map.
3. Ascertain how the service will be provided.
4. Set up definite areas and the degree of service.
5. Determine the cost to be incurred.
6. Obtain the assessed value of the service area.

Once the above information has been formulated, then, and only then, can the establishment of a service area be initiated. This may be accomplished basically by either introducing an ordinance or by filing a petition with the Borough Clerk. This newsletter article will not cover the procedures required by petition or by ordinance, because each borough has its own code or ordinance that covers this subject in detail. When all the particulars have been met and a service area has been established, it basically means that the residents of that area have agreed to tax themselves an additional levy; that is, an amount above normal taxes. By having the Service Area Board seek other sources of funding, residents can insure that their area will be maintained and improvements to the road system will be accomplished in a timely and scheduled manner. Service areas enable citizens to enhance the quality of their communities without requiring a significant increase in the cost of government on an areawide basis.



There is really no established formula or magic number that sets the size or quantity of Road Service Areas. The main concerns should be control, quantity, and levels of service of roads to be maintained, as well as the availability of service and supervision capabilities, whether they be volunteer unit supervisors or paid employees of the borough.

KENAI ROAD SERVICE AREAS

In order to briefly clarify how a Road Service Area can function and provide levels of service that will satisfy most needs, I will outline a program used by the Kenai Peninsula Borough. This program is working exceptionally well. Maintenance costs have continued to decrease each of the past few years even while we extend the levels of service.

Service areas for road maintenance on the Kenai Peninsula were originated in 1982, and at one time consisted of approximately 134 separate areas. Each area was responsible for maintaining within their individual boundaries and numerous local residents were paid to plow snow during the winter months. Summer maintenance was almost nonexistent. Additionally, this system was an accounting nightmare. It was very evident that the service areas needed to be more efficient and better organized. New ordinances revamping the system were introduced and approved. Four separate service areas with boundaries and a board of directors for each area were established.

The total mileage to be maintained for all service areas was approximately 450 miles of roads. The service area boards met at different times and utilized a central administration office consisting of a Road Maintenance Manager, a secretary, and three Road Inspectors. This system was in effect until 1991, but due to geographical locations and other differences, the system experienced many problems.

KENAI ROAD SERVICE AREA CONSOLIDATION

In August of 1991 the Road Service Area ordinance was rewritten, abolishing the four service areas and consolidating them into one service area with one board and seven directors. This proved to be a very worthwhile decision because it gave the Road Service Area Board a representative from each of the four regions within the service area, and three directors at large. The organization of the service area is as follows:

Central Region	*9 units totaling 284.77 miles*
North Region	*5 units totaling 115.61 miles*
South Region	*9 units totaling 167.80 miles*
East Region	*3 units totaling 28.01 miles*

The Board of Directors now have one thing in common and one major goal . . . the overall maintenance program and road improvements for the whole borough. Additionally, the administrative office, which now had a Director of Roads, has only one board to coordinate with. This has proven to be a very efficient way of conducting the daily activities required of the service area as an entity.

STANDARDIZED ROAD MAINTENANCE

The standardization of road maintenance for qualifying roads should be the main objective of the service area. Summer maintenance should consist of grading, ditching, culvert repair, frost boil repair, and limited amounts of gravel as needed. Winter maintenance should consist of snow removal, wingback as needed, sanding, and culvert thawing. Each of these activities can be expanded, but first you must always remember to stay within your budgeted goals. Consistent and timely maintenance equally for each unit must be one of your first considerations.

NEXT ARTICLE

In the next issue of *Technology for Alaskan Transportation*, I will cover the following topics which are an integral part of Road Service Areas:

Adopting Policies and Procedures

Adopting Rules and Regulations

Adopting By-Laws or Regulations

Only by establishing solid road standards, proven maintenance practices, and reasonable and justifiable decisions by all concerned will a service area be a viable and respected part of your community. It can be done simply by working with and not against the residents of your community.

For More Information

For back issues of our newsletter and inserts, or to get on our mailing list, write: Alaska Transportation Technology Transfer Program, Department of Transportation and Public Facilities, 2301 Peger Road, M/S 2550, Fairbanks, Alaska 99709-5399. For more information, you can also call (907) 451-5320.

Michigan DOT Streamlines Project Management With Desktop Data System

Networked system keeps workers at their desks, instead of searching for specialists or for paper-based data; linked PCs are part of evolving, sophisticated management system

edited by Tom Kuennen

A new computer system at the Michigan Department of Transportation is making it easier to manage road construction and maintenance projects by employing the simplest of concepts: fast delivery of information, summarized exactly as users need it.

Like many states in the wake of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), Michigan DOT is building a vast web of computing systems that track data on construction, maintenance, financial obligations and more.

Yet some of those systems exist on a mainframe computer and require a skilled programmer to access. Other systems have been moved off of the mainframe and onto workstations, but the data remained hard to access unless users knew a great deal about phrasing complex queries to databases.

Often it took a day's wait to request a report from someone else. Or a project manager had to visit a colleague across the office who would manually look up vital records that weren't tracked in the computer system. Michigan DOT had massive stores of data, but most of it was virtually unusable to the people who needed it.

In late 1993 Michigan DOT launched an innovative program to automate the delivery of data and eliminate the time-drains experienced every day when project development engineers, project managers and designers went to get information.

By the summer of 1994 Michigan DOT launched a series of computer applications that let users find out what they need to know from their desktop PC. The systems rely on a network of Microsoft Windows based PCs that run graphical display screens built using *PowerBuilder*, from Powersoft Corp.

Now, instead of waiting for vital information, users get it in seconds right from their desktop PC. Staffers can focus on other, more productive activities than data gathering. Even those who are unfamiliar with computing systems can point-and-click on the screen to find exactly what they need to know, 24 hours a day. The system will support other ISTEA-compliant systems that are under development, and is beginning to deliver the sizable productivity gains of 25% that Michigan DOT officials estimated at program outset.

"We get a better handle on project management, and give management a better bird's-eye view of our resources," said Dennis Jones, project manager in the information management group. "Once the rest of the information management saw what we were able to do, our approach caught on like wildfire." Now Michigan DOT is revising many of its information systems to include simplified front-ends that deliver desktop data.

The system, called the PROject Support Environment (PROSE), includes eight applications that take data from a central Project Information Network System (PINS), and deliver it faster and easier for non-programmers to use. Michigan DOT is currently in the latter stages of rolling out the program to about 700 project management staff in its nine offices across the state, with systems running today for about 100 users in the Lansing headquarters office.

Three of eight applications are complete. They include the

- **PINS General Information** (PGI) System, allowing simple *ad hoc* querying of the PINS database and displays of that information in chart, graph or table form instantly
- **Agreements Management** System, automating the process of administering agreements for both trunk line (i.e. state road) and non-trunk line projects, and the
- **Utility Relocation Tracking** System, tracking utility work from start to finish on all Michigan DOT-related projects, and providing immediate on-line access to information.

The remaining systems will be completed this summer, including systems for

- Litigation management
- Railroad project coordination management
- Local agency processing
- Real estate tracking, and
- Contract monitoring.

"The PROSE systems give us a better handle on our priorities," said Rudy Cadena, an engineer and system user in the Government Coordination and Engineering section.

Over 50% of Michigan DOT's billion dollar-plus budget is devoted to design and maintenance of roads, bridges and freeways in the state. Projects span multiple jurisdictions, and each involve up to 40 different steps for completion. With the mass of control section numbers, job agreement numbers and contract numbers, it's easy to get lost in the data, let alone the daily updates on the status of multiple projects.

"Now when a manager calls and asks the status of all projects with the City of Detroit, all it takes is a look at the screen to answer instantly," said Cadena. "Or managers can use their PCs to get the information themselves."

The ability to find out up-to-the-minute information, said Dennis Jones of Information Systems, helps engineers manage multiple projects better. They can scan a lot of information faster to make decisions, watch the changing status of projects, or uncover trends they otherwise might not have seen when they are mired in project detail.

Michigan DOT's desktop data initiative is making information available that just couldn't be found before, when data was hard to access. The Agreements Management System tracks agreements through the various stages of processing and streamlines administration.

Project engineers or administrative assistants enter updated information daily when agreement milestones are reached. The system sends electronic updates to the central PINS database and to other information systems, as well as to key personnel such as project managers.

The agreements system also allows better coordination between the Design and Engineering services groups, which no longer have to visit each other's desks to find out the latest event in a project of interest, but can simply check the PC for the latest status.

Michigan DOT must coordinate with all private and municipal utilities when road construction or maintenance impacts on any physical infrastructure of private utilities. The *Utility Relocation Tracking System* automates this process of planning, designing, organizing and scheduling work that impacts a utility. It tracks all utilities work from start to finish and provides immediate access on-line to all relevant information.

The system sends messages automatically when key milestones are reached and builds authorization files automatically. It lets utility permits engineers create reports whenever they need them, on whatever subject of interest, and links with the department's Word Perfect system for the creation of memo files.

The *PINS General Information* (PGI) system gives Michigan DOT employees a quick and easy way to view and print information from the PINS database. It can be extended to access the other PROSE databases to retrieve data that PINS does not store but that users found they needed. Most users found the PINS database too cumbersome to use for retrieving specific project information. The PGI system makes it easy to see trends and gather new perspectives on projects. When users have the flexibility to retrieve information in a format that is easy and familiar to them, they are freed from mastering the data, and can focus more on understanding it.

Rather than give users a hard-copy report with lengthy tables that are hard to interpret, the system displays data in either chart or graph form, or as tables, if desired. Users can choose how they wish to sort data, view it in chart or graph form, and save their most common queries so they can be productive each time they use the computer. They can see all their information on one screen, all at the same time, and access the detail at any time. Pop-up windows on the computer screen help make it easy to use.

The PGI system was so well-received, said Tyrone Ussery, PGI project manager in the information systems group, that Michigan DOT is rebuilding its underlying PINS database using the PowerBuilder software that Ussery's team used to build PGI. Michigan DOT also is creating a PGI-style interface for its forthcoming Railroad project information system and expanding PGI into a department-wide Executive Summary and Project Information system.

Michigan DOT's desktop data initiative was the continuation of its move away from its Unisys mainframe computer and toward a computing network driven by UNIX operating system-based workstations from Sun Microsystems. The computing system relies on the workstations to store data and act as the "server" to a network of 486-based PC "clients" scattered throughout the enterprise.

The PC "clients" store the custom-designed software, built using PowerBuilder, that displays graphical screens and allows easy access to the underlying PINS database.

PowerBuilder is a software development tool for building graphical front-ends to data in databases—front-ends like Michigan DOT's—that support sound business decision-making.

The PowerBuilder-based software allows Michigan DOT users to work with a computer mouse to "point-and-click" at screens of information, rather than type in cumbersome computer commands.

Reprinted with permission from Larry Flynn, Acting Editor as printed in "Roads and Bridges," Volume 33, Number 3, March 1995.

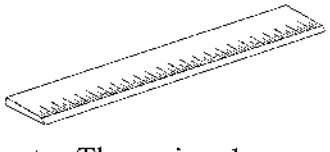
Secrets of Metric Action, and Where to Get Them...

by Gene Rehfield, P.E. State Metric Coordinator

You know how when you are watching a youngster, you suddenly realize that it's gotten awfully QUIET. You figure that they must be up to something. You search them out and ask "What are you doing?" The reply is invariably "NOTHING!" But it is funny how much actually happens when you are not paying attention.

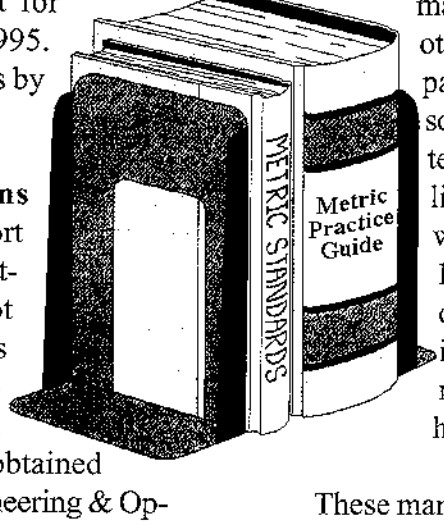
Well, the metric conversion of Alaska DOT&PF manuals, standards, drawings and specifications has been proceeding quietly along while you may not have been paying attention. In this article I'd like to familiarize you with all that has happened in recent months, while you may have thought we were doing nothing.

° **Metric Standard Specifications (94M).** An interim version of the State of Alaska Standard Specifications for Highway Construction (Blue Book) was issued in June, 1994 to DOT&PF Regions for use in contracts. The major change was to incorporate the use of the metric system. The document is available from DOT&PF Regional Offices, in disk or paper format.



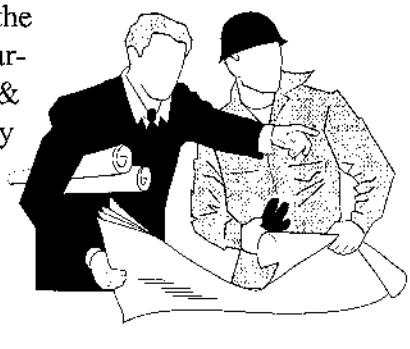
° **Draft Metric Airport Construction Specifications May, 1995.** A draft of the updated Airport Specifications was sent out for DOT&PF review on May 11, 1995. Comments are due to Headquarters by June, 15.

° **General Contract Provisions (GCP's).** This section of the Airport Specifications was converted to Metric in February, 1995, but has not been formally issued. The plan is to issue it along with the final version of the Airport Construction Specifications. Copies may be obtained from DOT&PF Headquarters Engineering & Operations.



° **Metric 1995 Preconstruction Manual Update.** A major revision of the Highway Preconstruction Manual was issued, with distribution scheduled for June, 1995. This document is over 400 pages, and the 1995 Update includes new revised information in the following chapters --*Organization Charts, Project Development, Public Involvement Procedures, Cost Effectiveness Analysis, ADA Compliance and Work Zone Traffic Safety*. The manual may be obtained from DOT&PF Headquarters at a cost of $50.

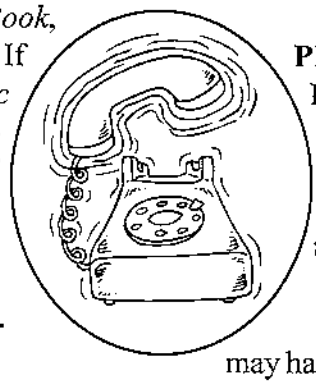
° **Standard Drawings** There are about 128 standard drawings and all have been converted to the metric system. They are available from the DOT&PF Headquarters Engineering & Operations and may be requested in CAD format, or in a bound set. Cost of the drawings is $350 for the CAD drawings, and $75 for a 5 year subscription for updates to the bound set.



° **Metric Practice Guide.** This guide is presently under development. This is a reference manual for use by DOT&PF staff, and others who work for or with the Department. The *Practice Guide* describes the proper usage of metric system units and conventions. A preliminary draft of the *Practice Guide* was given limited distribution in 1994. It is planned to produce a document for wider distribution during the next few months. The format and cost (if any) for distribution has not been determined.

These manuals and documents have been issued for use by DOT&PF staff and are for sale to inter-

ested parties as noted. Additional metric design tools are beginning to arrive at our office on a steady basis (for example the *1994 AASHTO Green Book*, and reference materials from many states). If you are interested in receiving the *Metric Practice Guide*, or any of the other publications mentioned, most of these DOT&PF documents can be obtained from:



Attn: Wende Weatherly
Alaska Department of Transportation and Public Facilities
Division of Engineering and Operations
3132 Channel Drive
Juneau, AK 99801-7898

Phone: 907-465-2960
Fax: 907-465-2460

That's all for now. Thank you for your interest in the DOT&PF metric action.

We'll continue to keep busy while you may have thought we were "DOING NOTHING!"

Soft vs. Hard Conversion

What does it mean?

Soft conversion is a *precise* restatement of one system's units, so the end result is usually an unwieldy number with several decimal places. Hard conversion is an *approximate* restatement of one system's units in another system, so that the end result is a whole manageable number. Soft conversion is a stopgap measure to get through a transitional period. Hard conversion is permanent: the bridge to the old system of units is burned.

What difference does it make?

The question of which conversion method to use arises when metric is required and old equipment and supplies are not yet used up. In the long run, soft conversion is usually undesirable because the metric terms may be necessary, for instance, when we are learning to covert mph to km/h. But what actually happens when we convert 20 miles per hour precisely to kilometers per hour? We get an awkward 32.18 km/h. Hard conversion is necessary to avoid complications like this.

Knock off the rough edges

In hard conversion, the soft-conversion value is rounded up or down. The amount of rounding depends on the item being converted. For instance, converting 20 mph to 32.18 km/h leaves strange decimals, and even eliminating the decimals leaves a pretty strange number for a speed limit. Thus, in hard conversion, 32.18 km/h becomes an even 30 km/h or 35 km/h. That's fine for a speed limit, but what happens when measurements must remain much more precise? What about interchangeability of parts? When interchangeability of matching parts is a factor, converted values must preserve the original degree of accuracy. There are two basic methods used in tolerance rounding. Method 1 ensures that the two limits do not change by more that five percent. On average, converted tolerances are equal to the original tolerances. Method 2 rounds tolerances toward the interior of the tolerance range, so that converted tolerances are always smaller than the original limits.

A hard look at old softies

The only things that should postpone hard conversion in some cases are old supplies and equipment that will require soft conversion until they are used up or worn out. In these cases, conversion devices and instruments on the market allow for quick conversions at the push of a button, making soft conversions about as simple as possible.

Excerpted from an article by Heather Edison Benson in the "KUTC Newsletter," The University of Kansas Transportation Center, May 1994, and the "Technology Transfer Newsletter," from the University of Connecticut Transportation Institute.

For More Information

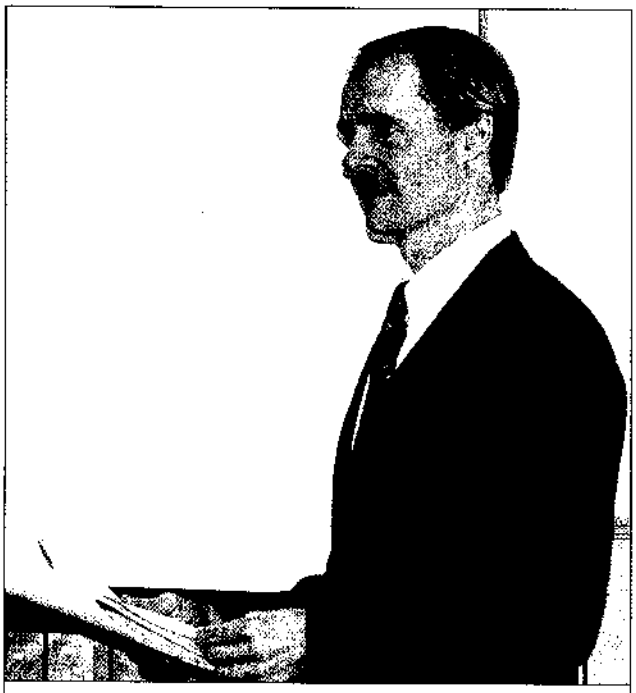
For back issues of our newsletter and inserts, or to get on our mailing list, write: Alaska Transportation Technology Transfer Program, Department of Transportation and Public Facilities, 2301 Peger Road, M/S 2550, Fairbanks, Alaska 99709-5399. For more information, you can also call (907) 451-5320.

National Quality Initiative 1995
No. 1

Alaska's NQI Program Begins

by Jerald Heimbuch, FHWA Alaska Division, Juneau, Alaska

Alaska officially started an in-state National Quality Initiative (NQI) program with a gathering of 120 transportation professionals in Anchorage March 29-30, 1995. The conference on "Improving Quality in Transportation Construction" was jointly sponsored by the Associated General Contractors (AGC), Alaska Department of Transportation and Public Facilities (DOT&PF) and the Federal Highway Administration (FHWA). National speakers discussed the overall NQI program as well as quality findings from the European Asphalt Tour. Local speakers covered areas from improved project development processes to simplified administration and construction procedures for village roads. Attendees gained a greater appreciation of the quality initiatives underway in Alaska, as well as areas still needing improvement.



Tony Johansen, Member, Alaska Chapter AGC Board of Directors; Chair, Highway Subcommittee

NQI at the national program level is supported by the entire transportation industry and carries forth the themes of "the highest return on investment" and "partnerships for quality." Contractors, suppliers, consultants, universities, and State and Federal agencies have been gathering in meetings all over America to work together to improve the quality of transportation products and services. The National Steering Committee has scheduled a second National Conference to be held in Washington, D.C. in November, 1995 to continue moving the initiative forward.

Nationally, areas targeted for improvement in other states include Quality Acceptance/Quality Control (QA/QC) specifications, incentive payments for quality materials, partnering, value engineering, performance related specifications, innovative contracting practices, technician training and certification programs, total quality management (TQM), innovative design, and various program management systems.

Alaskan conference attendees found that we are already off to a good start in quality improvements through actions that have been underway. Partnering agreements between contractors and the DOT&PF have already been implemented and have made significant contributions to lower project costs and better contract administration relationships. Value engineering on several design projects have reduced costs while delivering a better final product. The post-mortem reviews conducted on completed projects have pointed out new areas for quality improvements in both design and construction. New asphalt specifications are being developed to incorporate Strategic Highway Research Program (SHRP) findings. Special reports on these subjects will be presented in later NQI columns.

Quality improvement efforts of the Alaska transportation industry can only make our highway system stronger. NQI establishes a unique partnership opportunity. This partnership is necessary if the highway industry is to maintain the high level of public and legislative support that we have enjoyed in the past. We must keep moving ahead and one of the best ways to do that is through the continual improvement of the quality of our highways.

National Policy on the Quality of Highways

The National Transportation Policy charts a course for leading the United States' transportation system into the 21st century. The nation's highway network is an essential element of our transportation infrastructure and its quality is critical to America's economic growth and its ability to compete in the world marketplace.

The United States is a world leader in providing quality highways to the customer, the highway user. To maintain this leadership role, this policy is intended to fulfill the requirements of the highway user by providing a durable, smooth, safe, aesthetically pleasing, environmentally sensitive, efficient, and economical highway system, in balance with other modes of transportation.

In support of these principles, therefore, the National Policy on the Quality of Highways is to make a continuing commitment for quality products, information, and services through:

- Proper design, construction specifications related to performance, adherence to specifications, use of quality materials, use of qualified personnel, and sufficient maintenance;
- Constant improvement of highway engineering technology by increasing emphasis on cooperative research, implementation, and technology sharing;
- Flexibility, coupled with responsibility, for designers, contractors, workers, and suppliers;
- Adequate assurances of quality achievement in planning, design, and construction, by owner agencies;
- Incentives that reward achievements and innovations in providing a demonstrated level of value-added quality; and
- Cooperative development of quality management systems and specifications between Federal, State, and local agencies, academia, and industry.

The development and preservation of a high-quality highway system requires a close partnership between all stakeholders; therefore, the undersigned organizations have cooperatively developed this national policy and will strive to fulfill its principles. In witness whereof, it is sealed and signed at Dallas/Fort Worth Airport, Texas, this 10th day of November, 1992.

(Signed by)

AASHTO (American Association of State Highway & Transportation Officials)
FHWA (Federal Highway Administration, US DOT)
AGC (Associated General Contractors of America)
ARTBA (American Road & Transportation Builders Association)
ACPA (American Concrete Pavement Association)
NAPA (National Asphalt Pavement Association)
ACEC (American Consulting Engineers Council)
NRMCA (National Ready Mixed Concrete Association)
APWA (American Public Works Association)

For More Information

For back issues of our newsletter and inserts, or to get on our mailing list, write: Alaska Transportation Technology Transfer Program, Department of Transportation and Public Facilities, 2301 Peger Road, M/S 2550, Fairbanks, Alaska 99709-5399. For more information, you can also call (907) 451-5320.

NEW PUBLICATIONS AVAILABLE FOR LOAN ___ 1995

No. 38

Place a check by the publications you wish to borrow.

____ **Advanced Public Transportation Systems: The State of the Art Update '94**, ID-1261, U.S. DOT, DOT-T-94-09, Office of Technical Assistance and Safety, Advanced Public Transportation Systems Program: A Component of the Departmental IVHS Initiative, January 1994, 133pp.

____ **Advanced Public Transportation Systems: Evaluation Guidelines**, ID-1260, U.S. DOT, DOT-T-94-10, Office of Technical Assistance and Safety, Advanced Public Transportation Systems Program: A Component of the Departmental IVHS Initiative, January 1994, 312pp.

____ **Conceptual Plan for an Interactive Highway Safety Design Model**, ID-1258, U.S. DOT/FHWA, FHWA-RD-93-122, February 1994, 134pp.

____ **Development of Criteria for Design, Placement and Spacing of Rumble Strips**, ID-1266, Ohio Department of Transportation, FHWA/OH-93-022, October 1993, 128pp.

____ **EMBANK: A Microcomputer Program to Determine One-Dimensional Compression Settlement Due to Embankment Loads User's Manual**, ID-1251, U.S. DOT/FHWA, FHWA-SA-92-045, Office of Engineering, Office of Technology Applications, May 1993, 157pp.

____ **Federal Highway Administration Technology Applications Program**, ID-1243, FHWA-SA-93-016, U.S.DOT/FHWA, Office of Technology Applications, Safety and System Applications, January 1993, 115pp.

____ **Guidelines for Timing Contraction Joint Sawing and Earliest Loading for Concrete Pavements, Volume I: Final Report**, ID-1268, U.S. DOT/FHWA, FHWA-RD-91-079, February 1994, 292pp.

____ **Guidelines for Timing Contraction Joint Sawing and Earliest Loading for Concrete Pavements, Volume II: Appendix**, ID-1244, U.S. DOT/FHWA, FHWA-RD-91-080, February 1994, 200pp.

____ **Highway Research Abstracts**, ID-1264, Volume 26, Number 1, Transportation Research Board, National Research Council, Spring 1993, 394pp.

____ **Integrated Model of the Climatic Effects on Pavements**, ID-1253, U.S. DOT/FHWA, FHWA-RD-90-033, November 1993, 304pp.

____ **Intelligent Vehicle Highway Systems**, ID-1256, U.S. Department of Transportation, FHWA-SA-94-050, brochure.

____ **An Investigation of Load Transfer in Multi-Beam Prestressed Box Girder Bridges**, ID-1265, Ohio Department of Transportation, FHWA/OH-94/002, September 1993, 109pp.

____ **Management Training and Development Programs: A Synthesis of Highway Practice**, ID-1245, National Cooperative Highway Research Program, NCHRP Synthesis 188, 1994, 56pp.

____ **Methodology for Optimizing Signal Timing: M O S T Volume 3 - PASSER II-90 Users Guide**, ID-1246, U.S. DOT/FHWA, December 1991, 198pp.

____ **Methodology for Optimizing Signal Timing: M O S T Volume 5 - WHICH Users Guide**, ID-1262, Transportation Research Center, University of Florida, December 1991, 130pp.

____ **Practical Conflict Management Skills to Resolve Highway/Wetland Issues**, ID-1263, U.S. DOT/FHWA, FHWA-HI-93-016, NHI Course No. 14231 Participant Notebook, January 1993, 160pp.

____ **Professional Development of Maintenance Engineers and Managers**, ID-1269, National Cooperative Highway Research Program, NCHRP Report 360, Transportation Research Board, National Research Council, 1994, 52pp.

____ **Ramp Signing for Trucks**, ID-1252, U.S. DOT/FHWA, FHWA-RD-91-042, March 1993, 120pp.

____ **Research and Technology Program 1994-1998**, ID-1257, U.S. DOT/FHWA, January 1994, 64pp.

____ **SHRP-LTPP Specific Pavement Studies: Five-Year Report**, ID-1270, SHRP-P-395, Strategic Highway Research Program, National Research Council, April 1994, 164pp.

____ **SPILE: A Microcomputer Program for Determining Ultimate Vertical Static Pile Capacity User's Manual**, ID-1249, U.S. DOT/FHWA, FHWA-SA-92-044, Office of Engineering, Office of Technology Applications, June 1993, 172pp. Disk included.

____ **Stiffness of Asphalt-Aggregate Mixes**, ID-1271, SHRP-A-388, Strategic Highway Research Program, National Research Council, April 1994, 101pp.

____ **The Impact of Snow Properties on the Performance of Rotary Snowblowers**, ID-1267, Alaska Department of Transportation, June 15, 1993, 105pp.

____ **The Nature of and the Reasons for the Worldwide Decline in Drinking and Driving**, ID-1247, Transportation Research Circular, Number 422, Transportation Research Board, National Research Council, April 1994, 71pp.

____ **Tap into RTAP**, ID-1254, A Rural Transit Assistance Program of the Federal Transit Administration, U.S. DOT/FTA, information notebook.

____ **Training Resources Catalog For Rural and Specialized Transit Systems**, ID-1255, U.S. DOT/ FTA, A Rural Transit Assistance Program of the Federal Transit Administration, 1994, 293pp.

____ **Transient Protection, Grounding, and Shielding of Electronic Traffic Control Equipment**, ID-1248, National Cooperative Highway Research Program Report 317, Transportation Research Board, National Research Council, June 1989, 84pp.

____ **Transportation Infrastructure: Benefits of Traffic Control Signal Systems Are Not Being Fully Realized**, ID-1250, Report to the Chairman, Committee on Energy and Commerce, House of Representatives,United States General Accounting Office, GAO/RCED-94-105, March 1994, 33pp.

____ **Truck Accident Countermeasures on Urban Freeways**, ID-1259, U.S. DOT/FHWA, FHWA-RD-92-059, May 1994, 102pp.

These publications may be borrowed for three weeks. However, if you need the materials longer, just contact our office for an extension. Questions? Contact **Susan Earp** at (907) 451-5320 or TDD: (907) 451-2363.

Please print your name and address below, and mail or fax to:

Alaska Transportation Technology Transfer Program
Local Technical Assistance Program
Department of Transportation and Public Facilities
2301 Peger Road M/S 2550
Fairbanks, Alaska 99709-5399
FAX: (907) 451-2313

Name:_____ **Title:**_____ **M/S:**_____
Organization:_____
Address:_____
City:_____ **State/Province:**_____ **Zip:**_____
Phone:_____ **Fax:**_____

For More Information

For back issues of our newsletter and inserts, or to get on our mailing list, write: Alaska Transportation Technology Transfer Program, Department of Transportation and Public Facilities, 2301 Peger Road, M/S 2550, Fairbanks, Alaska 99709-5399. For more information, you can also call (907) 451-5320.

NEW VIDEOS AVAILABLE FOR LOAN _____ 1995

No. 38

Place a check by the videoptapes you wish to borrow.

____ **Alkali-Silica Testing**, ID-276, Strategic Highway Research Program, June 1994, 20:00 mins.

____ **Bridge Deck Overlays**, ID-275, Strategic Highway Research Program, June 1994, 19:00 mins.

____ **Concrete Pavement Overlays**, ID-281, Strategic Highway Research Program, June 1994, 22:00 mins.

____ **Early Opening of Full-Depth Concrete Repairs**, ID-280, Strategic Highway Research Program, June 1994, 10:00 mins.

____ **Freeze-Thaw Testing**, ID-279, Strategic Highway Research Program, June 1994, 25:00 mins.

____ **Full-Depth Repair of Jointed Concrete Pavement**, ID-278, Strategic Highway Research Program, June 1994, 18:00 mins.

____ **Introduction to Rehabilitation of Highway Concrete**, ID-277, Strategic Highway Research Program, June 1994, 18:00 mins.

____ **New Work Zone Safety Devices**, ID-273, Strategic Highway Research Program, 17:04 mins.

____ **Partial-Depth Repair of Concrete Pavement**, ID-282, Strategic Highway Research Program, June 1994, 15:00 mins.

____ **Plows of the Future**, ID-274, Strategic Highway Research Program, 8:00 mins.

ADDITIONAL PUBLICATIONS AVAILABLE FOR LOAN

Place a check by the publications you wish to borrow.

____ **Anti-Icing Study: Controlled Chemical Treatments**, ID-1289, SHRP-H-683, Strategic Highway Research Program, National Research Council, April 1994, 145pp.

____ **The Application of Small Nuclear Magnetic Resonance Spectrometers to Quality Control Measurements of Asphalt and Asphalt-Aggregate Mixes**, ID-1274, SHRP-A-382, Strategic Highway Research Program, National Research Council, February 1994, 42pp.

____ **Asphalt Concrete Mixtures**, ID-1284, Transportation Research Record 1417, Transportation Research Board, National Research Council, 1993, 186pp.

____ **Civil Engineering Careers: A User's Guide for Awareness, Retention, and Curriculum Programs**,ID-1287, NCHRP Report 347-Part II, National Cooperative Highway Research Program, Transportation Research Board, National Research Council, 1994, 107pp.

____ **Conference Proceedings I: Third International Conference on Managing Pavements Volume 1**, ID-1277, Transportation Research Board, National Research Council, San Antonio, TX, May 22-26, 1994, 277pp.

____ **Conference Proceedings I: Third International Conference on Managing Pavements Volume 2**, ID-1278, Transportation Research Board, National Research Council, San Antonio, TX, May 22-26, 1994, 341pp.

____ **Environmental Issues Related to Materials and Stabilization**, ID-1286, Transportation Research Record, National Research Council, 1993, 49pp.

____ **Field Performance of Structures and Nondestructive Evaluation of Subsurface Infrastructure**, ID-1283, Transportation Research Record 1415, Transportation Research Record, National Research Council, 1993, 103pp.

____ **Field Performance of Subsurface Drainage**, ID-1281, Transportation Research Record 1425, Transportation Research Board, National Research Council, 1993, 63pp.

____ **Innovations in Travel Survey Methods**, ID-1282, Transportation Research Record 1412, Transportation Research Board, National Research Council, 1993, 94pp.

____ **Intelligent Vehicle Highway Systems Projects**, ID-1279, Department of Transportation, March 1994, 331pp.

____ **Keller's Official OSHA Safety Handbook**, ID-1288, J.J. Keller & Associates, Inc., 1994, 218pp.

____ **Low-Volume Roads: Environmental Planning and Assessment, Modern Timber Bridges, and Other Issues**, ID-1280, Transportation Research Record 1426, Transportation Research Board, National Research Council, 1993, 80pp.

____ **Performance-Related Testing and Evaluation of Characteristics of Aggregates and New Geomaterials**, ID-1285, Transportation Research Record 1418, Transportation Research Board, National Research Council, 1993, 66pp.

____ **Roadside Safety Features and Landscape and Environmental Design**, ID-1276, Transportation Research Record 1419, Transportation Research Board, National Research Council, 1993, 133pp.

____ **SHRP-LTPP Traffic Data Collection and Analysis: Five-Year Report**, ID-1273, SHRP-P-386, Strategic Highway Research Program, National Research Council, March 1994, 39pp.

____ **SHRP-LTPP General Pavement Studies: Five-Year Report**, ID-1272, SHRP-P-387, Strategic Highway Research Program, National Research Council, March 1994, 79pp.

____ **The SUPERPAVE Mix Design System Manual of Specifications, Test Methods, and Practices**, ID-1275, SHRP-A-379, Strategic Highway Research Program, National Research Council, March 1994, 253pp.

These videotapes and publications may be borrowed for three weeks. However, if you need the materials longer, just contact our office for an extension. Questions? Contact **Susan Earp** at (907) 451-5320 or TDD: (907) 451-2363.

Please print your name and address below, and mail or fax to:

Alaska Transportation Technology Transfer Program
Local Technical Assistance Program
Department of Transportation and Public Facilities
2301 Peger Road M/S 2550
Fairbanks, Alaska 99709-5399
FAX: (907) 451-2313

Name:_____ **Title:**_____ **M/S:**_____
Organization:_____
Address:_____
City:_____ **State/Province:**_____ **Zip:**_____
Phone:_____ **Fax:**_____

For More Information

For back issues of our newsletter and inserts, or to get on our mailing list, write: Alaska Transportation Technology Transfer Program, Department of Transportation and Public Facilities, 2301 Peger Road, M/S 2550, Fairbanks, Alaska 99709-5399. For more information, you can also call (907) 451-5320.

New Publications in the T2 Library _____ 1995

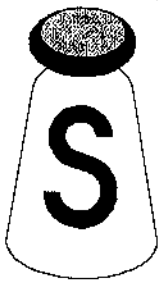
The publications listed are available for loan from the Alaska T2 Program library. To borrow any of the materials listed, contact ***Susan Earp*** *at (907) 451-5320.*

Prime Coat Methods and Materials to Replace Cutback Asphalt, FHWA/TX-94/1334-1F, C. Mantilla and J. Button. Alternatives to cut back asphalt road base prime coats are sought to reduce volatile organic chemical releases during construction.

Influence of Coarse Aggregate Shape and Surface Texture on Rutting of Hot Mix Asphalt Concrete, FHWA/TX-94/1244-6, M. Yeggoni, J. Burton, and D. Zollinger. These researchers found a direct correlation between permanent deformation of asphalt concrete mixtures and shape characteristics of coarse aggregate particles used in the mixtures.

Economic Evaluation of Calcium Magnesium Acetate (CMA) Production for Road Deicing, FHWA/H-94/003, by Shang-Tian Yang, Hui Zhu, Ying Li. CMA is a biodegradable, low-corrosion deicer that can be used to replace salt for roadway deicing, thus minimizing salt damage to highways and environments. The authors propose a process to produce CMA from liquid whey, a waste product from cheese manufacturing. The authors report that this process could reduce the price of CMA by over 50 percent, from the current market price of $650/ton to about $300/ton, and allow economical use of CMA deicer in environmentally sensitive areas and on new bridges.

Test and Evaluation of Salt/CMA Mixtures, by K. Gustafson. This is an interim report on research being conducted over 2 winters. The final report is to be published in late 1995. First winter testing indicates: the salt/CMA mix works as well or better than salt in most situations, the deicing effect is sometimes longer lasting with the salt/CMA mix, lab and field tests indicate less corrosion with the mix, but the effect is limited.

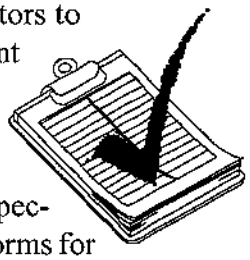


Evaluation of Solar Energy Facilities at Rest Areas in Ohio, FHWA/OH-94/007, by G.A. Hazen and S.M. Sargand. This study evaluates the performance and economics of solar water heating and photovoltaic emergency lighting systems at two Ohio rest areas. For a 20 year design life the solar systems were found to be 9% to 22% more economical than conventional systems.

Performance Evaluation of Fiber Reinforced Asphalt Concrete, FHWA/OH-94/018, by Yeou-Shang Jenq and Pei Liu. Literature review, site condition surveys, and lab tests suggest that synthetic fiber reinforcement improves the crack resistance of asphalt concrete pavements, but has little effect on rutting resistance. More rigorous field testing is recommended for verification.

Precision of Biodegradable Solvents in Determining Asphalt Content and Aggregate Gradation, FHWA/OH-94/021, by Yeou-Shang Jenq. The effectiveness of biodegradable substitutes for chlorinated solvents was evaluated for use in centrifuge extraction tests of hot mix asphalt quality. A procedure for accurately determining asphalt content and aggregate gradation using biodegradable solvents is recommended.

Soil Nailing Field Inspectors Manual, FHWA/SA-93/068, by J.A. Porterfield, D.M. Cotton, P.E., and R.J. Byrne, P.E. This manual will help experienced and inexperienced inspectors to effectively monitor and document the construction of soil nail retaining walls. The manual addresses both preconstruction preparation and construction inspection. Inspection checklists and forms for documentation and testing are included.



Recommendations Clouterre 1991, (English Translation) ***Soil Nailing Recommendations 1991***, FHWA/SA-93/206. This report is the English language translation of the French National Project on Soil Nailing, a technique for reinforcing in-place soils that was developed in France. The report summarizes the whole design and construction process, from geotechnical investigation to field quality control of soil nailing projects.

Optimal Application and Placement of Roadside Reflective Devices for Curves on Two-Lane Rural Highways, FHWA/OH-94/011, by H.T. Zwahlen. A survey of curve delineation practices in the U.S. and Canada indicated the importance of a set of quantitative delineation guidelines. The development of a delineation software package (OCARD) led to the recommendation of a number of changes in the curve delineation process.

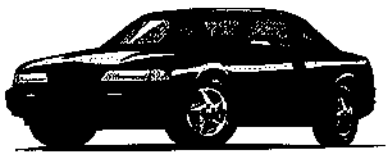
Precipitate Potential of Highway Subbase Aggregates, FHWA/OH-94/004, by J.D. Gupta and W.A. Kneller. Previous studies suggest that free lime [CaO] present in subbase materials is the source for the deposition of tufa. This study suggests the presence of free lime or portlandite [$Ca(OH)_2$] in the cement paste of concrete can cause tufa precipitation.

Summary Report - 1993 Field Evaluations of SPS-3 and SPS-4 Test Sites, FHWA/SA-94/078, Hassan Raza, PE. Nationwide field evaluations of SHRP preventive maintenance treatment test sites indicate that pavement sections on which preventive maintenance treatments were applied have generally outperformed the sections that received no treatment. The treatments were more effective when applied before significant deterioration had set in. If maintenance treatments are applied at the right time, the pavement will have a longer service life, at less cost.

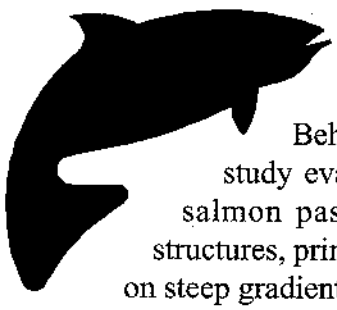
Characteristics of Glass Fiber-Reinforced Composite Materials for use in Roadway Safety Barriers, by Binshan Ye, FHWA-RD-94-048. The FHWA is interested in the development of roadside safety structures composed of composite materials. This study focuses on the understanding of the mechanical properties of composite materials of several different fiber architecture types. Test results are presented with a discussion of design considerations and possibilities for further research.

The Effects of Bicycle Accommodations on Bicycle/Motor Vehicle Safety Traffic Operations by W.C. Wilkinson, A. Clarke, B. Epperson, R. Knoblauch, FHWA-RD-92-069. This report assesses the Federal government's policy goal for bicycling and defines two basic types of "design bicyclists." The report presents specific recommendations for selecting roadway design treatments to accommodate all types of bicyclists under various sets of traffic operational factors. A description of the assumptions, principles, and approaches used to develop the recommendations and a model planning process are presented.

Spectrum Needs for Intelligent Vehicle-Highway System Application, Transportation Research Circular #428. This is a report on the proceedings of a workshop conducted to refine the understanding of the communications requirements of the Intelligent Vehicle-Highway System (IVHS) and to define spectrum needs for specific IVHS applications. It is particularly important that the IVHS community understand its spectrum needs before a request is presented to the Federal Communications Commission (FCC). The FCC allocation process is both costly and lengthy and FCC policies favor spectrum applicants who can document their needs. The report presents an estimate of the spectrum needs for different application areas and service environments, based upon assumptions about the various possible communications technologies and architectures.



Alaska DOT&PF Research Reports



Salmon Passage Through Culverts, SPR-UAF-92-4, by C.E. Behlke and D.L. Kane. This study evaluates the problems with salmon passage through hydraulic structures, primarily corrugated culverts, on steep gradient streams in Alaska.

Gravel Roadway Maintenance in Cold Regions, SPR-UAF-92-14, by F.L. Bennett. Several surface treatments for gravel roadways are reviewed, including calcium chloride, lignosulfonate, asphalt emulsion, Earth Material Catalyst Squared™, Road Oyl™, sodium montmorillonite, and the "no treatment" option. This report includes a spreadsheet for comparing treatment costs, and the design for a field test of long-term cost and performance of several treatment alternatives.

The Cold Regions Infrastructure

An International Imperative for the 21st Century

ASCE

Eighth International Specialty Conference on Cold Regions Engineering

August 12–17, 1996 • Fairbanks, Alaska USA

CALL FOR PAPERS

Conference Cosponsors

American Society of Civil Engineers
Alaska Section
Anchorage Branch
Fairbanks Branch
Juneau Branch
Ketchikan Branch
Air Transportation Division
Pipeline Division
Geotechnical Division

Canadian Society for Civil Engineering

University of Alaska Fairbanks

Alaska Transporation Technology Transfer Program

U.S. Army Cold Regions Research and Engineering Laboratory

Alaska Department of Transportation and Public Facilities

Alaska Department of Environmental Conservation

Alaska Society of Professional Engineers

Project Management Institute–Alaska Chapter

American Institute of Architects–Alaska

Alaska Science & Technology Foundation

Society of American Military Engineers

Alaska Cooperative Extension

All prospective authors are invited to submit abstracts for papers in all areas of cold regions engineering including:

BUILDINGS	PIPELINES
HIGHWAYS	UTILITIES
AIRPORTS	RAILROADS
COMMUNICATIONS	FROZEN SOILS

Two mini-symposia will be arranged in the following topics; papers are especially encouraged in these areas:

TRANS-ALASKA PIPELINE- DESIGN AND OPERATION
ARCTIC MILITARY CONSTRUCTION

The conference will include concurrent sessions, traditional technical sessions, panel discussions and computer aided presentations. Please suggest additional topics and presentation venues. Contact the program chair for further coordination.

Pre- and post-conference workshops are being planned for:

FROZEN SOIL-WATER PROBLEMS
THERMO-SYPHON DESIGN
ARCTIC CONSTRUCTION ENGINEERING

Several technical and general interest field tours are being planned to include the northern Alaska oil fields, the permafrost tunnel, the Trans-Alaska Pipeline and local power and utility systems.

Abstract and paper deadlines are:

500 word abstract-	August 1, 1995
Acceptance notification-	September 15, 1995
Submittal of manuscript-	January 15, 1995
Final notification-	March 1, 1996
Submittal of camera ready copy-	May 1, 1996

For further information, please contact the following at the conference address, phones or e-mail:

Conference Chair: Dr. F. Lawrence Bennett, PE

Program Chair: Dr. Robert F. Carlson, PE

Sponsored by American Society of Civil Engineers Technical Council on Cold Regions Engineering

Conference Office:
University of Alaska Fairbanks
School of Engineering
P.O. Box 755900
Fairbanks, Alaska 99775-5900

Phone: 907-474-6121
Fax: 907-474-6087
e-mail:
fyasce8@aurora.alaska.edu

1995 T2 CALENDAR OF EVENTS

DATE	EVENT	SPONSOR/CONTACT	LOCATION
May 22	Ethics and the Right of Way Profession	IRWA, Manuel Lopez, (907) 266-1447	The Federal Building, Anchorage, Alaska
May 23	Introduction to the Income Approach to Valuation	IRWA, Manuel Lopez, (907) 266-1447	The Federal Building, Anchorage, Alaska
May 24	Valuation of Contaminated Properties	IRWA, Manuel Lopez, (907) 266-1447	The Federal Building, Anchorage, Alaska
June 20-21	NHI #38062 Safety Management System	Alaska DOT&PF, (907) 451-5320	Sheraton Anchorage Hotel, Anchorage, Alaska
June 25-29	Sixth International Conference on Low-Volume Roads	Transportation Research Board, (612) 626-2259	The University of Minnesota, Minneapolis, Minnesota
July 12-19	Global Positioning System (GPS) Technical Workshop	Iowa Transportation Center, (515) 294-8103	Iowa State University, Ames, Iowa
July 13-14	Complying w/ the Americans w/ Disabilities Act in Facilities Planning & Design	University of Wisconsin Madison, (608) 262-1299	The Wisconsin Center, Madison, Wisconsin
July 17-21	1995 6th Annual Nat'l Mgmt. Conference & Exposition	Environmental Resource Institute, (419) 422-6063	The Westin Hotel-O'Hare, Chicago, Illinois
August 1	Call for Papers: 8th Internat'l Speciality Conference on Cold Regions Engineering	ASCE, CSCE, UAF, Alaska T2 Center, CRREL, etc. (907) 474-6121	University of Alaska Fairbanks, Fairbanks, Alaska

* NHI - National Highway Institute

Meetings Around Alaska

Society	Chapter	Meeting Days	Location
ASCE	Anchorage Fairbanks Juneau	Monthly, 3rd Tues., noon Monthly, 3rd Fri., noon Monthly, 1st Wed., noon*	Northern Lights Inn Captain Bartlett Inn Breakwater Inn *except June - August
ASPE	Fairbanks	Monthly, 1st Fri., noon	Captain Bartlett Inn
ASPLS	Anchorage Fairbanks	Monthly, 3rd Tues., noon Monthly, 4th Tues., noon	Executive Cafeteria Federal Building Sunset Inn
ITE	Anchorage	Monthly, 4th Thurs., noon	Sourdough Mining Company
IRWA	Sourdough Ch. 49 Arctic Trails Ch. 71 Totem Ch. 71	Monthly, 3rd Thurs., noon** Monthly, 2nd Thurs., noon# Monthly, 1st Wed., noon	West Coast Internat'l Inn **except July & Dec. Captain Bartlett Inn #except December Mike's Place, Douglas
ICBO	Northern Chapter	Monthly, 1st Wed., noon	Zach's, Sophie Station
AWRA	Northern Region	Monthly, 3rd Wed., noon Brown Bag Lunch	Rm 531 Duckering Bldg., University of Alaska Fairbanks, Larry Hinzman, 474-7331

To publicize an event in our calendar, contact us at (907) 451-5320.

Who's Who in Alaska's Transportation

Rufus Bunch, City Engineer, Fairbanks, Alaska

As the top engineer for the City of Fairbanks, Rufus Bunch often provides technical advice on controversial or politically divisive projects. Bunch approaches these controversial topics with information and education, not personal opinion. "I supply the council and the city manager with good information. Whatever path they choose to take, I will take care of the nuts and bolts," Bunch told the Fairbanks Daily News-Miner last November. "I try not to supply any bias with the information. That's not our job, to put slants on the information. I will give my opinion when it is time and when it is asked for."

Bunch leads a team of 19 employees, including six engineers, who design and oversee the capital projects for all parts of the city's infrastructure. The City Engineers' Office has recently been working on designs for the reconstruction of the Old Steese Highway and Trainor Gate Road, and the relocation of utilities along Illinois Street in Fairbanks. Road building projects within the city limits are usually cooperative efforts of the City Engineers' Office in conjunction with Alaska DOT&PF.

Construction work faces special problems in the subarctic climate of the Fairbanks area. Bunch noted the limited construction season and the effects of wide temperature variations on structures as the main areas where Alaska's climate impacts his work.

Rufus Bunch was born in Baker, Oregon where he lived until his family moved to Ketchikan, Alaska when he was ten years old. Bunch has worked for the city of Fairbanks as an engineer since 1989. In May, 1994 he began serving as Acting City Engineer, and was officially appointed to the top engineering position last October. Engineering is a second career for Bunch, who worked for 10 years as a carpenter in Ketchikan before coming to Fairbanks to finish a Civil Engineering degree at the University of Alaska Fairbanks. "I worked for a journeyman and went

through what I consider a formal, four-year apprenticeship," Bunch told the News-Miner. "He instructed me and had strong feelings about how things should be done."

Those work qualities, which Bunch noted as helpful in his work for the city, include respecting others' property, taking care of customers, and working hard. "You may not have enough people in the system to get the work done, but if you put your shoulder to it, you'll get the job done," Bunch told the News-Miner. "You can do a lot with a few people."

That principle works well for Bunch, when city budget limitations keep the number of available workers low. Conforming to environmental regulations is particularly challenging, Bunch said. "We don't have a lot of money to do it, so we're working with a shoestring budget, working with DEC and meeting the intent of the regulations," Bunch told the News-Miner.

Bunch is currently a member of the Fairbanks Metropolitan Area Transportation System (FMATS) Technical Committee. He also is a member of the Local Technical Assistance Program's Alaska Transportation Technology Transfer Center Advisory Board.

Bunch is married to Mary Bunch and they have one son. While his son was playing hockey on school teams, Bunch got interested and started playing hockey himself. He played on the C and B leagues for a few years and last fall he joined the Old Timers League. Bunch also helps out with ice-rink construction and maintenance at public schools in Fairbanks. He is also interested in capentry and computers.

Adapted from the "Fairbanks Daily News-Miner's " spotlight on Rufus Bunch, by Patricia Jones, November 21, 1994.